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10/822,066	04/08/2004	Tom Fawcett	200310087-1	2089

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EXAMINER	
BHARADWAJ, KALPANA	
ART UNIT	**PAPER NUMBER**
2129	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/822,066	FAWCETT ET AL.	
	Examiner	Art Unit	
	KALPANA BHARADWAJ	2129	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the Appeal Brief filed on Feb 09, 2009. The previous Final Office Action sent out on Sept 08, 2008 is hereby withdrawn.

Status of Claims

2. Claims 1-23 are pending.

In the event that the applicant wishes to file an amendment, it is suggested that they further define what is meant by "managed systems".

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-5, 8-16 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnold (US 2004/0243692, referred to as **Arnold**), and further in view of Murata, (USPN 2003/0167245, referred to as **Murata**).

For purposes of reading the claims in light of the specification, the applicant's invention is referred to as **Fawcett**.

As to Claim 1, 14, 22, 23,

Arnold discloses a method of identifying at least one exceptional managed system (not further defined) amongst a set of comparable managed systems, each managed system (**Arnold, ¶** 0001: managed computer system and storage systems) having a number of system configuration attributes, the method comprising:

selecting a set of managed systems; (**Arnold, ¶** 0022: storage-using application, storage infrastructure) selecting a set of parameterizations relating to the managed systems; (**Arnold, ¶** 0044: group of constraints.)

(The applicant discloses (**Fawcett, ¶** 0017) that parameterization is a constraint.) determining a pattern (not further defined; reads on e.g., **Arnold, ¶** 0042: model of the storage system; 'model', also called an 'arrangement' reads on 'pattern' **EN:** As is evident by the applicant's own admission, a pattern reads on e.g., a model or a set of rules see **Fawcett: ¶** 0018) for each of the parameterizations based on the system configuration attributes; (not further defined: reads on e.g., **Arnold, ¶** 0023: configuration information) comparing substantially each of the managed systems to substantially each of the patterns; (**Arnold, ¶** 0045: comparing allocation request, 0049 checked against the attributes) and isolating (not further defined: reads on e.g., **¶ 0042:** new arrangement)

Although it can be argued that Arnold discloses machine learning in the sense that policies and rules (0025 or 0038) are used and machines (e.g., computer systems) learn which nodes in

a network, Arnold fails to particularly call for patterns being determined by a "supervised" machine learning algorithm.

However, Murata teaches determining patterns by a supervised machine learning algorithm (**Murata, ¶** 0020: supervised machine learning). Arnold and Murata are from the same field of endeavor, resource selection and classification. It would have been obvious to one of ordinary skill in the art to have modified Arnold's resource allocation with supervised machine learning, for the benefit of classifying based on relevance to the user.

As to Claim 2,

Arnold modified by Murata, discloses the method of claim 1, wherein the managed systems are computer systems. (**Arnold, ¶** 001)

As to Claim 3,

Arnold modified by Murata, discloses the method of claim 2, wherein the system configuration attributes include at least one of the following:

operating system patches; (**Arnold, ¶** 0022: operating systems)

active processes;

installed application software programs;

memory configuration; (**Arnold, ¶** 0022: local memory) and peripheral devices. (**Arnold, ¶** 0022: disk drives)

As to Claim 4, 15,

Arnold modified by Murata, discloses a method of claim 1, wherein selecting of the set of managed systems includes classification of the systems in accordance with a system attribute. (**Arnold, ¶** 0026: service class comprising availability, space requirements).

As to Claim 5, 16,

Arnold modified by Murata, discloses a method according to claim 1, further comprising allocating a resource to any system that has been isolated. (**Arnold,** abstract: allocation of storage resources).

As to Claim 8,

Arnold modified by Murata, discloses a method according to claim 1, further comprising assigning a priority value to an isolated system (**Murata, ¶** 0056: predefined order of priority).

It would have been obvious to one of ordinary skill in the art to have modified Arnold's resource allocation with specific resource priorities for the benefit of selecting, sequencing and weighting the parameters (**Murata, ¶** 0073).

As to Claim 9, **19**,

Arnold modified by Murata, discloses a method according to claim 8, further comprising compiling a list of isolated systems (**Arnold, ¶** 0052: analyzing capabilities of the computer storage system and forming analysis results; also, **Arnold, ¶** 0052: measurement and analysis component, Fig 1) and ordering the isolated systems in accordance with their priority values (**Murata, ¶** 0056: predefined order of priority).

EN: The rationale for modifying the base reference follows the same line of reasoning as discussed in claim 8.

As to Claim 10,

Arnold modified by Murata, discloses a method according to claim 8, further comprising allocating a resource (**Arnold, ¶** 0052: associating an allocation request) in accordance with priority values (**Murata, ¶** 0056: predefined order of priority).

EN: The rationale for modifying the base reference follows the same line of reasoning as discussed in claim 8.

As to Claim 11, **20**,

Arnold modified by Murata, discloses a method according to claim 1, wherein the supervised machine-learning algorithm (**Murata, ¶** 0020: supervised machine learning; **EN:** See claim 1 for reasons to combine) is a rule learning algorithm. (**Arnold, ¶** 0044: usage patterns; **EN:** As is evident by the applicant's own admission, a

pattern is a model or a set of rules (**Fawcett, ¶** 0018). Therefore, a rule-learning algorithm is inherent in Arnold's disclosure because he uses usage patterns to model his system and a pattern is a set of rules).

EN: The rationale for modifying the base reference with supervised machine learning follows the same line of reasoning as discussed in claim 1.

As to Claim 12,

Arnold modified by Murata, discloses a method according to claim 1, further comprising annotating an isolated system with a measure (**Arnold, ¶** 0017: measurement and analysis for possible reallocation and Fig. 6) indicative of the results of the comparing, wherein the measure is based on at least one of the following:

an extent of deviation from a pattern; (**Arnold, ¶** 0044: quality-of-service)

a degree of support for a pattern; (**Arnold, ¶** 0044: quality-of-service)

a confidence level of a pattern; (**Arnold, ¶** 0044: quality-of-service)

an assessment of the significance of a pattern (**Arnold, ¶** 0044: quality-of-service for certain usage patterns); or

a cumulative number of patterns from which the system deviates. (**Arnold, ¶** 0044: quality-of-service)

To a person with ordinary skills in the art, a method indicative of the extent of deviation, degree of support, confidence level,

assessment of the significance of a pattern and/or the cumulative number of patterns from which the system deviates are all inherently a part of quality-of-service because by definition, a quality-of-service is a measure or assessment of a system or model.

As to Claim 13,

Arnold modified by Murata, discloses s a method according to claim 12, further comprising compiling a list of isolated systems ordered in accordance with said measures. (**Arnold,** ¶ 0017: measurement and analysis for possible reallocation; ¶ 0044: quality-of-service.)

The art of compiling a list of systems that are ordered based on priority in accordance to the quality of service measures is well known in the art, because priority and ordering are methods of sorting which are primitive algorithms found in any text book on data structures, ex Introduction to algorithms by Cormen, Leiserson et al.

As to Claim 21,

Arnold modified by Murata, discloses a system according to claim 14, further comprising an annotation component that annotates the isolated systems with a measure (**Arnold,** ¶ 0017: measurement and analysis for possible reallocation and Fig. 6) that indicates

the extent to which each isolated system deviates from the patterns. (**Arnold, ¶** 0044: quality-of-service)

It is noted that the annotation component is inherent because by definition, a quality-of-service is a measure or assessment of a system or model which implies a system indicative of the extent of deviation from the usage pattern.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 6-7 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnold (US 2004/0243692, referred to as **Arnold**) and Murata, **(**USPN 2002/0107843, referred to as **Murata**) and further in view of Hines (USPN 2003/0028825, referred to as **Hines**).

As to Claim 6, 17,

Arnold modified by Murata, do not explicitly disclose a method according to claim 1, wherein the set of parameterizations includes at least one parameterization relating to operating system patches.

However, Hines teaches the set of parameterizations including at least one parameterization relating to operating system patches (**Hines, ¶** 0079: operating system, patch and other information**).**

Arnold, Murata and Hines are from the same filed of endeavor, computer system analysis. It would have been obvious to one of ordinary skill in the art to have combined Arnold modified by Murata's resource allocation with operating system patches, for the benefit of being able to choose analysis parameters specific to operating system patches (**Hines, ¶** 0049).

As to Claim 7, 18,

Arnold modified by Murata, does not disclose a method according to claim 5, wherein the set of parameterizations includes at least one parameterization relating to operating patches and the step of allocating a resource to the system includes an analysis of whether at least one operating patch should be installed or removed from a system.

However, Hines teaches parameterization relating to operating patches (**Hines, ¶** 0079: operating system, patch and other information**)** and the step of allocating a resource to the system includes an analysis of whether at least one operating patch should be

installed or removed from a system. (**Arnold, ¶** 0022: the step of specifying constraints; operating system services).

EN: The rationale for modifying the base reference with operating system patches follow the same line of reasoning as claim 6 and 17 and have been omitted for brevity.

Examinations Considerations

7. Examiner's Notes (**EN**) are provided with the cited references to prior art to assist the applicant to better understand the nature of the prior art, application of such prior art and, as appropriate, to further indicate other prior art that maybe applied in other office actions. Such comments are entirely consistent with the intent and spirit of compact prosecution. However, and unless otherwise stated, the Examiner's Notes are not prior art but a link to prior art that one of ordinary skill in the art would find inherently appropriate.

8. Examiner has cited particular columns and line numbers (or paragraphs) in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is

respectfully requested from the Applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. The entire reference is considered to provide disclosure relating to the claimed invention.

Response to Arguments

9. Applicant's arguments filed Feb 09, 2009 have been fully considered but they are not persuasive.

10. Regarding Applicant’s arguments concerning the use of patterns, isolating a system and supervised machine learning algorithm, the examiner has provided newer references and therefore they are moot with respect to the new grounds of rejection, e.g.. pattern is being read on a model. :

Conclusion

11. Claims 1-23 are rejected.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KALPANA BHARADWAJ whose telephone number is (571)270-1641. The examiner can normally be reached on Monday-Friday 7:30am 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Vincent can be reached on (571) 272-3080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bharadwaj Kalpana/
Examiner, Art Unit 2129
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